

AMENDMENTS TO THE CLAIMS:

1. - 42. (Canceled).

43. (Currently Amended) A neurostimulating lead comprising:
- a body member having a wall, a proximal end and a distal end;
 - a first conductor within the wall of the body member and extending between the proximal end and the distal end;
 - a second conductor within the wall of the body member and extending between the proximal end and the distal end, and wherein the first conductor and the second conductor are each spaced about the same distance from a longitudinal axis of the body member;
 - a first opening in the wall leading to the first conductor;
 - a second opening in the wall leading to the first conductor;
 - a third opening in the wall leading to the second conductor;
 - a first conductive link within the first opening to electrically connect to the first conductor;
 - a second conductive link within the second opening to electrically connect to the first conductor;
 - a third conductive link within the third opening to electrically connect to the second conductor;

a first band electrode positioned proximate the outer surface of the body member and electrically connected to the first conductive link and to the second conductive link; and
a second band electrode positioned proximate the outer surface [[fo]] of the body member and electrically connected to the third conductive link.

44. (Previously Presented) The neurostimulating lead in accordance with Claim 43 further comprising at least one connector having a contact electrically joined to the first conductor at the proximal end of the body member and adapted to connect the lead to a neurostimulator.

45. (Previously Presented) The neurostimulating lead in accordance with Claim 43 wherein the body member is tubular and having an annular wall defining an internal lumen extending between the proximal end and the distal end, and wherein the first conductor being spiral wound and embedded in the annular wall.

46. (Previously Presented) The neurostimulating lead in accordance with Claim 45 wherein the body member comprises polyurethane and has an outer diameter of about 2 French and an internal diameter of about 0.012 inch.

47. (Previously Presented) The neurostimulating lead in accordance with Claim 46 wherein the first conductor has a substantially rectangular cross-section about 0.004 inch wide by about 0.002 inch high.

48. (Previously Presented) The neurostimulating lead in accordance with Claim 47 wherein the first conductor comprises metal, and wherein the metal is selected from a group consisting of stainless steel, MP35N, titanium, tantalum, tungsten, platinum, and silver.

49. (Previously Presented) The neurostimulating lead in accordance with Claim 45 wherein the first conductor comprises turns, with each turn being at an angle between about 10 degrees to about 80 degrees from a longitudinal axis of the body member.

50. (Previously Presented) The neurostimulating lead in accordance with Claim 49 wherein the electrode comprises a thin film electrode.

51. (Previously Presented) The neurostimulating lead in accordance with Claim 43 wherein the first conductive link and the second conductive link comprise conductive epoxy.

52. (Previously Presented) The neurostimulating lead in accordance with Claim 43 wherein the first conductive link and the second conductive link comprise an electroplated conductive link.

53. (Previously Presented) The neurostimulating lead in accordance with Claim 52 wherein the electroplated conductive link comprises a metal selected from a group consisting of gold, silver, platinum, platinum-iridium and titanium.

54. (Previously Presented) The neurostimulating lead in accordance with Claim 43 wherein the electrode comprises a thin film electrode, and the electrode comprises a first segment and a second segment disposed along a longitudinal dimension of the body member in overlapped relation, the first segment and the second segment adapted to be electrically connected to a one of a voltage of positive polarity, a voltage of negative polarity, and zero voltage.

55. (Previously Presented) The neurostimulating lead in accordance with Claim 43 wherein the electrode comprises a thin film electrode, the thin film electrode comprising a first layer of a metal selected from a group consisting of titanium, chromium, nickel and aluminum and having a thickness less than about 5 microns and a second layer of a metal selected from the group consisting of gold, platinum, platinum-iridium, silver and copper and having a thickness between about 500 angstroms and about 50 microns.

56. (Previously Presented) The neurostimulating lead in accordance with Claim 43 wherein the first conductor is embedded within the wall of the body member.

**ATTORNEY DOCKET NO. 02-064 CIP (ANSI01-00012)
U.S. SERIAL NO. 09/500,213
PATENT**

57. - 61. (Canceled).

62. (Currently Amended) A medical lead comprising:

a body member having a length, a surface, a proximal end and a distal end;

a first conductor extending substantially the length of the body member;

a first tunnel extending from the surface to the first conductor;

a second tunnel extending from the surface to the first conductor;

a first conductive link within the first tunnel and electrically connected to the first conductor;

a second conductive link within the second tunnel and electrically connected to the first conductor;

a first electrode positioned at the distal end of the body member, and wherein the first conductive link and the second conductive link are electrically connected to the electrode;

a second conductor extending substantially the length of the body member, and wherein the first conductor and the second conductor are each spaced about the same distance from a longitudinal axis of the body member;

a third tunnel extending from the surface to the second conductor;

a fourth tunnel extending from the surface to the second conductor;

a third conductive link within the third tunnel and electrically connected to the second conductor;

a fourth conductive link within the fourth tunnel and electrically connected to the second conductor; and

a second electrode positioned at the distal end of the body member, and wherein the third conductive link and the fourth conductive link are electrically connected to second electrode.

63. (Previously Presented) A medical lead comprising:
- a body member having a wall, a proximal end and a distal end;
 - a first conductor and a second conductor within the wall and extending substantially from the proximal end to the distal end, and wherein the first conductor and the second conductor are each spaced about the same distance from a longitudinal axis of the body member;
 - a first band electrode and a second band electrode proximate a one of the proximal end and the distal end;
 - a first conductive link extending through the wall and electrically connecting the first conductor and the first electrode;
 - a second conductive link extending through the wall and electrically connecting the first conductor and the first electrode; and
 - a third conductive link extending through the wall and electrically connecting the second conductor and the second electrode.

64. (Previously Presented) The medical lead in accordance with Claim 63 wherein the first conductive link comprises a conductive epoxy.

65. (Canceled)

66. (Previously Presented) The medial lead in accordance with Claim 63 wherein the first conductor is spirally wound, with each turn being at an angle between about 10 degrees to about 80 degrees from a longitudinal axis of the body member.

67. (Currently Amended) A medical lead, comprising:

a lead body having an insulator and having a first conductor and a second conductor spaced substantially equidistant from the axis of the lead body, and wherein the insulator comprises,
a first region formed by removal of at least a portion of the insulator, the first region exposing at least a portion of the first conductor,
a second region formed by removal of at least a portion of the insulator, the second region exposing at least a portion of the first conductor,
a third region formed by removal of at least a portion of the insulator, the third region exposing at least a portion of the second conductor,
a fourth region formed by removal of at least a portion of the insulator, the fourth region exposing at least a portion of the second conductor;
a first electrode electrically connected to the first conductor through the first region and electrically connected to the first conductor through the second region; and

a second electrode electrically connected to the second conductor through the third region and electrically connected to the second conductor through the fourth region.

68. (Previously Presented) The medical lead in accordance with Claim 67 wherein the lead body further comprises a distal end and a proximal end, and the first region, the second region, the third region, the fourth region, the first electrode and the second electrode are located proximate the distal end of the lead body.

69. (Currently Amended) The medical lead in accordance with Claim 67 further comprising a third conductor and a fourth conductor, and wherein each of the first conductor, the second conductor, the third conductor and the fourth conductor are spaced substantially equidistant from the axis of the lead body, wherein the first conductor and the second conductor are each spaced about the same distance from a longitudinal axis of the lead body.

70. (Previously Presented) The medical lead in accordance with Claim 67 wherein the first conductor and the second conductor are spirally wound, with each turn being at an angle between about 10 degrees to about 80 degrees from a longitudinal axis of the lead body, ~~and wherein the first conductor and second conductor are substantially equidistant from the axis of the lead body.~~

71. (Previously Presented) A medical lead, comprising:

a lead body having an insulator and a first conductor and a second conductor, the first conductor and the second conductor spaced about the same distance from a longitudinal axis of the lead body, and wherein the insulator comprises,

a first tunnel region formed by removal of at least a first portion of the insulator from the lead body, at least a portion of the first tunnel region formed to expose at least a first portion of the first conductor,

a second tunnel region formed by removal of at least a second portion of the insulator from the lead body, at least a portion of the second tunnel region formed to expose at least a second portion of the first conductor,

a third tunnel region formed by removal of at least a third portion of the insulator from the lead body, at least a portion of the third tunnel region formed to expose at least a first portion of the second conductor,

a fourth tunnel region formed by removal of at least a fourth portion of the insulator from the lead body, at least a portion of the fourth tunnel region formed to expose at least a second portion of the second conductor;

a first conductive link having at least a portion thereof positioned within the first tunnel region, the first conductive link electrically connected to first conductor;

a second conductive link positioned within the second tunnel region, the second conductive link electrically connected to the first conductor;

a third conductive link having at least a portion thereof positioned within the third tunnel region, the third conductive link electrically connected to second conductor;

a fourth conductive link positioned within the second tunnel region, the fourth conductive link electrically connected to the second conductor;

a first band electrically connected to the first conductive link and electrically connected to the second conductive link; and

a second band electrically connected to the third conductive link and electrically connected to the fourth conductive link.

72. (Previously Presented) The medical lead in accordance with Claim 71 wherein each of the tunnel regions comprise a channel cut in the insulator.

73. (Previously Presented) The medical lead in accordance with Claim 71 wherein the first conductive link comprises electroplating material.

74. (Previously Presented) The medical lead in accordance with Claim 71 wherein the first conductive link comprises a conductive epoxy.

75. (Previously Presented) A medical lead, comprising:

a lead body having an insulator, a first conductor and a second conductor each spaced about the same distance from a longitudinal axis of the body member, wherein the insulator comprises,
a first opening formed by removal of at least a first portion of the insulator from the lead body, at least a portion of the first opening formed to expose at least a first portion of the first conductor,

a second opening formed by removal of at least a second portion of the insulator from the lead body, at least a portion of the second opening formed to expose at least a second portion of the first conductor,

a third opening formed by removal of at least a third portion of the insulator from the lead body, at least a portion of the third opening formed to expose at least a first portion of the second conductor, and

a fourth opening formed by removal of at least a fourth portion of the insulator from the lead body, at least a portion of the fourth opening formed to expose at least a second portion of the second conductor;

a first conductive link within the first opening, the first conductive link electrically connected to the first conductor;

a second conductive link within the second opening, the second conductive link electrically connected to the first conductor;

a third conductive link within the third opening, the third conductive link electrically connected to the second conductor;

a fourth conductive link within the fourth opening, the fourth conductive link electrically connected to the second conductor;

a first band electrode electrically connected to the first conductive link to electrically connect the first band to the first conductor, and electrically connected to the second conductive link to electrically connect the first band to the first conductor; and

a second band electrode electrically connected to the third conductive link to electrically connect the second band to the second conductor, and electrically connected to the fourth conductive link to electrically connect the second band to the second conductor.

76. (Previously Presented) The medical lead in accordance with Claim 75 wherein the first conductor and the second conductor extend substantially the length of the lead body and are spirally wound about a longitudinal axis of the lead body ~~and spaced about the same distance from the longitudinal axis.~~

77. (Previously Presented) The medical lead in accordance with Claim 76 wherein the first conductive link and the second conductive link comprise a one of an electroplating material and a conductive epoxy.

78. (Currently Amended) The medical lead in accordance with Claim 43 further comprising a third conductor and a fourth conductor, and wherein the first conductor, the second conductor, the third conductor and the fourth conductor wherein the first conductor and the second conductor extend substantially the length of the body member and are each spaced about the same distance from a longitudinal axis of the body member.